Three-dimensional metrology on CMM with laser head

Working volume:
- Z axis: 600mm
- Y axis: 1000mm
- X axis: 700mm

3D controls without limits:
- Castings and forged parts
- Precision machining parts
- Plastic parts
- Rubber parts
- Contactless and touch probe inspection
- 3D scanning, digitalization and reverse engineering with no compromise

Laser head as a touch probe:
- Automatic tooling change
- Unique measuring environment
- Laser and standard analysis combined
- Unique measurement report

Laser head on CMM measuring:
- Accuracy comparable with touch probe.
- Not only single points but point clouds acquisition
- Detail level increase in the analysis
- Confidence level increase in product conformity evaluation

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position error (MPE)</td>
<td>1.5µm (0.0001in)</td>
</tr>
<tr>
<td>Maximum travel (MM)</td>
<td>1.5µm (0.00015in)</td>
</tr>
<tr>
<td>Resolution (point spacing)</td>
<td>2µm (0.00008in)</td>
</tr>
<tr>
<td>Data acquisition (approx.)</td>
<td>210000 points/sec</td>
</tr>
<tr>
<td>Points per line (approx.)</td>
<td>9000</td>
</tr>
<tr>
<td>Measuring temperature range</td>
<td>54.2°C to -71.4°F</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>10°C to 40°C (50-100°F)</td>
</tr>
<tr>
<td>Warm-up time</td>
<td>0 (seconds)</td>
</tr>
<tr>
<td>Weight</td>
<td>370g (13oz)</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP50</td>
</tr>
<tr>
<td>Laser type</td>
<td>Class 2 (440nm)</td>
</tr>
<tr>
<td>Laser head compatibility</td>
<td>PMMA, PM1700, CIH50, PMG</td>
</tr>
</tbody>
</table>

Medical implants
Complex free form geometry

Turbine blades
Complex geometry plastic
Medical implants
High precision tooling
Nowadays design is in 3D
Nowadays production is in 3D
Quality controls must be in 3D.

In Metrix 3D all this is reality

AND IT IS NOT ALL

- 3D controls are automated on CMM
- These are 3D controls on serial production

Measurements techniques available:

- Touch probing
- Precision continuous touch scanning
- Contactless laser scanning with integrated laser head

Innovation factors:

- Measurement techniques managed in a single environment
- High information quantity available in parts analysis
- Every type of material can be checked in details
- Controls and reverse engineering can be performed with no compromise

Complete reports with:

- 3D color mapping
- GD&T analysis
- Tables with tolerances evaluation
- Cross section analysis
- Wall thickness analysis

The amount of data acquired can be used for REVERSE ENGINEERING

- Defining modifications, wear and tear and deformations
- Reproducing complex shape objects
- Reproducing soft and flexible objects
- Handwork preservation
- Developing tool paths
- FEM analysis support
- Prototypes Construction